EDL Technology Development for the Maraia Earth Return Capsule

Completed Technology Project (2013 - 2015)

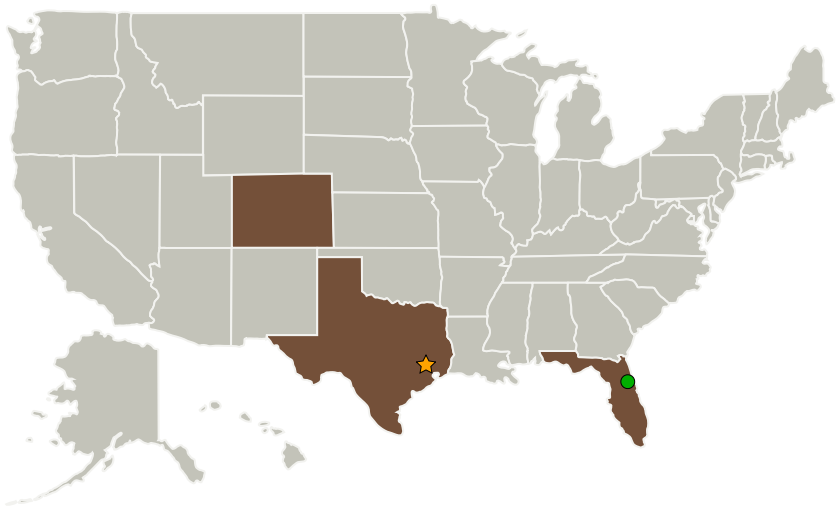
Project Introduction

The Maraia capsule suborbital test was to investigate and inform the design of the Entry Descent and Landing (EDL) subsystems for a small earth return capsule. Such a capsule design could allow for the on-demand return of small samples from the ISS and, by acting as an earth atmospheric entry test-bed, provide for the advancement of other exploration related EDL technologies.

Anticipated Benefits

The flight demonstration of this technology was used to help advance the understanding of the high-speed performance and active control of a candidate small atmospheric entry capsule that may one day return scientific samples from the International Space Station or demonstrate Entry technologies later used at Mars.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Kennedy Space Center(KSC)	Supporting Organization	NASA Center	Kennedy Space Center, Florida
UP Aerospace, Inc	Supporting Organization	Industry	Highlands Ranch, Colorado

Primary U.S. Work Locations	
Colorado	Florida
Texas	

Project Transitions

August 2013: Project Start

November 2015: Closed out

Closeout Summary: The Maraia capsule was launched on a suborbital test fligh t on November 6, 2015 from Spaceport America. Separation and descent appear ed normal, but the capsule was lost after a parachute anomaly. Capsule recover ed on October 14, 2016; onboard data was unrecoverable.

Project Website:

https://www.nasa.gov/directorates/spacetech/home/index.html

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Spacecraft Technology

Project Management

Program Director:

Christopher E Baker

Program Manager:

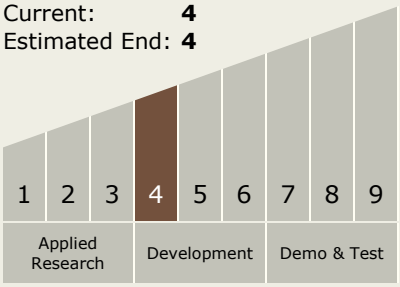
Roger Hunter

Principal Investigator:

Alan L Strahan

Technology Maturity (TRL)

Start: **4**
Current: **4**
Estimated End: **4**



Target Destination

Earth